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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Michael R. Harris

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EXAMINER

LAO, LUN S

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,620	HARRIS, MICHAEL R.	
	Examiner	Art Unit	
	Lun-See Lao	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Introduction

1. This action is in response to the amendment filed on 08-15-2007. Claims 1-12 have been amended and claim 13—24 have been added. Claims 1-24 are pending.

Claim Objections

2. Claim 13 is objected to because of the following informalities: claim 13 recites “an FM” on lines 10, which appears to be –a FM--. Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “a receiver configured to receive a broadcast audio transmission comprising text data and an audio signal” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The amendment filed 08-15-2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "the signal combiner is configured to time-division multiplex the digitally encoded speech and the audio signal to generate the combined signal"; and "the processor is configured to time- domain multiplex the digitally encoded speech and the audio signal to generate to combined audio signal". Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 6 and 8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 6 recited "the signal combiner is configured to time-division multiplex the digitally encoded speech and the audio signal to generate the combined signal". However, the specification does not clearly disclose how the processing of "the signal combiner is configured to time-division multiplex the digitally encoded speech and the audio signal to generate the combined signal" will be performed. It was not supported in the specification nor in any claim originary presented.

7. Claims 16 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 16 and 24 recited "the processor is configured to time- domain multiplex the digitally encoded speech and the audio signal to generate to combined audio signal". However, the specification does not clearly disclose how the processing of "the processor is configured to time- domain multiplex the digitally encoded speech and the audio signal to generate to combined audio signal"

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will be performed. It was not supported in the specification nor in any claim originally presented.

These claims 6, 8, 16 and 24 will be rejected based on the examiner's best understanding.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 5, 7, 9-15 and 17-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (US PAT. 6,374,177).

Consider claim 1 Lee teaches an FM transmitter comprising:

a processor (see 20 in fig.1), configured to receive text data associated with an audio signal and to convert the text data into digitally encoded speech (see col. 10 line 60-67);

a signal combiner configured to combine the digitally encoded speech with the audio signal into a combined signal; an FM encoder configured to encode the combined signal an FM standard into an FM signal; and

a transmitter configured to transmit the FM signal (see figs 1-3 and col. 2 line 13-31, col.6 line 33-67).

Consider claims 2-3 Lee teaches the signal combiner referred to as a first signal combiner, wherein: the processor is configured to the convert the text data according to a radio data system (RDS) standard to generate a modulated RDS signal (see fig.1 and col. 2 line 13-38); and further comprising a second signal combiner configured to combine the modulated RDS signal into the FM signal ; and the processor is a programmed processor comprising code to control controls the processor to generate the modulated RDS signal (see figs 1-3 and col. 2 line 13-59).

Consider claims 5 and 7 Lee teaches that the processor is configured to receive a digital audio input signal as the audio signal and to encode the digital audio signal to provide a digital FM encoded audio signal; and the FM encoder, the first signal combiner, and the second signal combiner are implemented in the processor (see fig.1 col. 6 line33-col. 7 line 24); and the processor is a programmed processor comprising code to control the processor to convert the text data into the digitally encoded speech (see fig.1 and col. 10 line 60-67).

Consider claims 9-12 Lee teaches that an auxiliary audio device is configured to generate the audio signal; and the processor is a control processor of the auxiliary audio device (see fig.2); and the auxiliary audio device is a device selected from a group consisting of a CD player, a CD- MP3 player, a universal satellite receiver, and a digital audio broadcast receiver (see fig.2); and the FM transmitter further comprising a wireless remote control receiver, coupled to the auxiliary audio device, the wireless

remote control receiver to receive commands to control the auxiliary audio device and to receive commands to select text data to be transmitted in the FM signal (see figs 1-3 and col. 2 line 13-31, col. 6 line 33-67); and a housing (see 160 in fig.2) to which the processor, the signal combiner, the FM encoder, and the transmitter are mounted, the housing comprising: an audio input to receive the audio signal from an auxiliary audio device; and a data input to receive the text data from the auxiliary audio device; wherein the housing is physically distinct from the auxiliary audio device (see figs 1-2 and col. 8 line 25-col. 9 line 55).

Consider claim 13 Lee teaches a transceiver, comprising: a receiver configured to receive a broadcast audio transmission comprising text data and an audio signal; a radio data system (RDS) modulator configured to generate a modulated text data signal in response to the text data; a frequency modulation (FM) encoder configured to generate an FM encoded audio signal in response to the audio signal; a signal combiner configured to combine the modulated text data signal and the FM encoded audio signal into a combined signal; and an FM transmitter configured to transmit the combined signal (see figs 1-3 and col. 2 line 13-59, col.6 line 33-67).

Consider claims 14-15 Lee teaches that the receiver is a satellite audio receiver comprising a processor; and at least one of the RDS modulator, the FM encoder, and the signal combiner are implemented in the processor of the satellite audio receiver(see figs 1-3 and col. 2 line 13-59, col.6 line 33-67); and the transceiver further comprising: a processor configured to convert the text data into digitally encoded speech and to combine the digitally encoded speech and the audio signal into a combined audio

signal; wherein the FM encoder is configured to generate the FM encoded audio signal in response to the combined audio signal (see figs 1-3 and col. 2 line 13-59, col.6 line 33-67).

Consider claims 17-18 Lee teaches a housing in which the receiver and at least one of the RDS modulator, the FM encoder, the signal combiner, and the FM transmitter are mounted (see figs 1-2 and col. 8 line 25-col. 9 line 55); and each of the RDS modulator, the FM encoder, the signal combiner, and the FM transmitter are mounted in the housing (see figs 1-2 and col. 8 line 25-col. 9 line 55).

Consider claim 19 Lee teaches a handheld audio player, comprising: a storage device; a processor configured to receive an audio signal and associated text data from the storage device; an audio output configured to output the audio signal in response to the processor; and a frequency modulation (FM) transmitter configured to transmit the audio signal and the text data (see figs 1-3 and col. 2 line 13-59, col. 4 line 46-57, col.6 line 33-67).

Consider claims 20-22 Lee teaches that the handheld audio player further comprising: a radio data system (RDS) modulator configured to generate a modulated text data signal in response to the text data; an FM encoder configured to generate an FM encoded audio signal in response to the audio signal; and a signal combiner configured to combine the FM encoded audio signal and the modulated text data signal into a combined signal; wherein the FM transmitter is configured to transmit the combined signal(see figs 1-3 and col. 2 line 13-59, col. 4 line 46-57, col.6 line 33-67); and at least one of the RDS modulator, the FM encoder, and the signal combiner are

implemented in the processor(see figs 1-2 and col. 2 line 13-59, col. 4 line 46-57, col.6 line 33-67); and the handheld audio player is one of a compact disc (CD) player, a flash player, an MP3 player, and a hard disk drive (HDD) jukebox (see figs 1-2 and col. 2 line 13-59, col. 4 line 46-57, col.6 line 33-67).

Consider claim 23 Lee teaches that the processor is configured to convert the text data into digitally encoded speech and to combine the digitally encoded speech and the audio signal into a combined audio signal (see col. 10 line 60-67); wherein the FM transmitter is configured to transmit the combined audio signal (see figs 1-2 and col. 2 line 13-59, col.6 line 33-67).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US PAT. 6,374,177) in view of Ohnishi (US PAT 5,682,431).

Consider claim 4 Lee teaches an analog FM stereo encoder configured to generate an analog FM signal as the FM signal; and

a processor configured the analog modulated RDS signal to exclude signal components outside of a range of frequencies according to an RDS standard; wherein

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the signal combiner is configured to combine the analog and modulated RDS signal into the analog FM signal (see figs 1-2 and col. 2 line 13-59, col.6 line 33-67); but Lee does not show a digital to analog converter coupled to the processor and configured to convert the modulated RDS signal an analog modulated RDS signal. However; the CPU Inherently has a digital to analog converter coupled to the processor and configured to convert the modulated RDS signal an analog modulated RDS signal because the signals need to be converted to the correct format for the CPU to process the signals.

On the other hand, Lee does not teach a band-pass filter.

However, Ohnishi teaches that a band-pass filter (8) configured to filter the analog modulated RDS signal to exclude signal components outside of a range of frequencies according to an RDS standard (5);

wherein the signal combiner (9) is configured to combine the band-pass filtered analog modulated RDS signal (8) into the analog FM signal (f0-fc and see col. 6 line34-col. 7 line 50).

Therefore, it would have been obvious to one of the ordinary skill in the at the time the invention was made to combine the teaching of Ohnishi into Lee so that noise in the radio data control system could have been effectively reduced.

12. Claims 6, 8, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US PAT. 6,374,177) in view of Ishii (US 2002/0132612).

Consider claim 6 Lee does not explicitly teach that the signal combiner is configured to time-division multiplex the digitally encoded speech and the audio signal to generate the combined signal.

However, Ishii teaches the signal combiner is configured to time-division multiplex the digitally encoded speech and the audio signal to generate the combined signal (see fig.1 and page 4 [0048]-[0050]).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ishii into Lee so that the transmission frequencies undergo a hopping sequence for increasing the power at which the signals are transmitted.

Claim 16 is essentially similar to claim 6 and rejected for the reason stated above apropos to claim 6.

Claim 24 is essentially similar to claim 6 and rejected for the reason stated above apropos to claim 6.

Consider claim 8 Lee teaches the processor is configured to receive a digital audio signal as the audio signal (see figs 1-2 and col. 2 line 13-59, col.6 line 33-67); but Lee does not explicitly teach that the signal combiner comprises multiplexing circuitry in the processor to time- division multiplex the digital audio signal and the digitally encoded speech to generate the combined signal.

However, Ishii teaches that the signal combiner comprises multiplexing circuitry in the processor to time- division multiplex the digital audio signal and the digitally encoded speech to generate the combined signal (see fig.1 and page 4 [0048]-[0050]).

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Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ishii into Lee so that the transmission frequencies undergo a hopping sequence for increasing the power at which the signals are transmitted.

Response to Arguments

13. Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ruhl (US PAT. 6,285,862) is cited to show other related integrated short range RDS FM transmitter.

16. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:


Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See *L.S.*
Patent Examiner
US Patent and Trademark Office
Knox
571-272-7501
Date 10-12-2007


VIVIAN CHIN
SUPERVISOR PATENT EXAMINER
TECHNOLOGY CENTER 2600